



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE COURTSHIP OF THE MERGANSER, MALLARD,
BLACK DUCK, BALDPATE, WOOD DUCK AND
BUFFLEHEAD.¹

BY CHARLES W. TOWNSEND, M. D.

THE following studies have all been made within the limits of large cities, where the birds, protected from gunners, act without fear and show, sometimes at close range, their natural characteristics. The Baldpate has been studied at Jamaica and Leverett Ponds, the Merganser, Mallard and Black Duck at these ponds and in the Fens and Back-Bay Basin — all in the Boston Park System — in the reservoir at Chestnut Hill and at Fresh Pond in Cambridge. All of these bodies of water are within four miles of the Boston State House, and, as I frequently pass near them, I have made a practice for several years of stopping whenever possible and watching the ducks through strong binoculars. The Bufflehead has been studied chiefly at Squantum and at Lynn Beach, while the Wood Duck has been watched at still closer range in the Boston Zoölogical Park. All my notes, which were made on the spot and extend over several years, are drawn upon so as to give as complete a picture as possible for each bird. This seems worth while as so little has been published on the courtship of North American ducks. The reader is referred to previous papers on the courtship of the Golden-eye and Eider² and of the Red-breasted Merganser.³

The occupations of wintering ducks may be roughly divided into three parts. Most of their time is spent in procuring food either by diving or dipping; another part is devoted to preening their feathers and to sleeping either on the water or on the shore or ice; the rest is devoted to courtship. Courtship is commonly to be seen in the autumn months, less frequently in December and January, but it occupies more and more time and increases in ardency during February, March and April, before the departure of the

¹ Read before the Nuttall Ornithological Club, April 26, 1915.² Auk, XXVII, 1910, p. 177.³ Auk, XXVIII, 1911, p. 341.

birds for the breeding grounds. A group of birds are apt to be all doing the same thing at the same time. For example, courting may be going on actively, when suddenly the flock takes to diving or dipping. Again the birds may become indolent, and doze and preen themselves, so that one may often be disappointed on visiting a pond to find the ducks all feeding or dozing and not courting. If one's time is limited, he may often draw a blank.

If, in a group of ducks the drakes are seen to be restlessly swimming back and forth or weaving their way in and out through the crowd as if they were at an afternoon tea, the case looks promising. This afternoon-tea-effect is very characteristic of courtship among water birds in general, and one can often tell at a glance whether courtship is in progress or not. The most favorable opportunity for observation is afforded when the ducks are crowded into a small area of open water near the shore by the freezing over of the larger part of the pond.

There is a great variety in the methods of courtship of ducks from the very spectacular performance,—the song and dance—of the Whistler to the simpler movements of the Mallard, but one can trace in most of them a general family resemblance. All are interesting as primitive forms of dancing, an art which has undergone wonderful developments in the human species, but undoubtedly owes its origin to courtship impulses. It is to be noted that, even among mankind, the dance may not be with the feet alone, but may include movements of the body, neck, head, arms and hands. Indeed certain human dances in Java and some of the Oceanic islands are limited to one or more of these last named movements without any leg action.

The courtship of the Merganser or Goosander (*Mergus americanus*), is fairly spectacular and differs widely from that of its red-breasted cousin, *M. serrator*. The only description I can find of it is one by Mr. William Brewster¹ who states that he saw the performance on March 16, 1909, at Fresh Pond, Cambridge. This and the brief description given by Mr. J. G. Millais² of the Courtship of the European Merganser (*Mergus merganser*),—a

¹ Bird Lore, XIII, 1911, p. 125–127.

² British Diving Ducks, 1913, vol. 2, p. 94.

bird which is regarded by many authors as identical with *M. americanus* — correspond very closely to my own observations which now follow:

A group of five or six male Mergansers may be seen swimming energetically back and forth by three or four passive females. Sometimes the drakes swim in a compact mass or in a file for six or seven yards or even farther, and then each turns abruptly and swims back. Again they swim in and out among each other, and every now and then one with swelling breast and slightly raised wings spurts ahead at great speed by himself or in the pursuit of a rival. The birds suggest swift motor boats by the waves which curl up on either side, and by the rapidity with which they turn and swash around. Again they suggest polo-ponies, as one in rapid course pushes sidewise against a rival, in order to keep him away from the object of the quest. They frequently strike at each other with their bills, and I have seen two splendid drakes rise up in the water breast to breast, and, amid a great splashing, during which it was impossible to see details, fight like game-cocks. The pursuit is varied by sudden, momentary dives and much splashing of water.

The smooth iridescent green heads, the brilliant carmine bills tipped with black nails, the snowy white of flanks and wing patches and the red feet, which flash out in the dive, make a wonderful color effect, contrasting well with the dark water and white ice. The smaller females with their shaggy brown heads, their neat white throat-bibs, their quaker blue-gray backs and modest wing patches, which are generally hidden, are fitting foils to their mates. I have reserved for the last the mention of the delicate salmon yellow tint of the lower breast and the belly of the male, a coloration of which he is deservedly proud, for, during courtship, he frequently raises himself up almost on to his tail with or without a flapping of the wings and reveals this color, in the same way that the Eider displays his jet black shield. Most of the time he keeps his tail cocked up and spread, so that it shows from behind a white centre and blue border. Every now and then he points his head and closed bill up at an angle of forty-five degrees or to the zenith. Again he bows or bobs his head nervously and often at the same time tilts up the front of his breast from which flashes out the salmon

tint. From time to time he emits a quickly repeated purring note, *dorr - dorr* or *krr - krr*.

The most surprising part of the performance is the spurt of water fully three or four feet long which every now and then is sent backwards into the air by the powerful kick of the drake's foot. It is similar to the performance of the Whistler but much greater, and while the foot of the Whistler is easily seen and is plainly a part of the display, it is difficult to see the red foot of the Merganser in the rush of water, although it is evident doubtless, to the females. The display of the brilliantly colored foot in both species is probably the primary sexual display, and the splash, at first incidental and secondary, has now become of primary importance.

During all this time the female swims about unconcernedly, merely keeping out of the way of the ardent and belligerent males, although she sometimes joins in the dance and bobs in a mild way. At last she succumbs to the captivating display and submerges herself so that only a small part of her body with a bit of the crest appear above the water, and she swims slowly beside or after her mate, sometimes even touching him with her bill. Later she remains motionless, flattens herself still more, the crest disappears and she sinks so that only a line like that made by a board floating on the water is seen. One would never imagine it to be a live duck. The drake slowly swims around her several times, twitches his head and neck, picks at the water, at his own feathers and at her before he mounts and completely submerges her, holding tightly with his bill to her neck meanwhile. Then she bathes herself, washes the water vigorously through her feathers and flaps her wings; the drake stretches himself and flaps his wings likewise. From the beginning of submergence by the female the process is the same in all the duck family that I have observed.

The Mallard (*Anas platyrhynchos*) is a common duck in Jamaica and Leverett Ponds, in the Fens and in the Back Bay Basin. Most of these birds have been introduced by the Park Department and semi-domesticated, and some are housed in winter, but there are always a considerable number that fly freely and spend the winter in the few open places at the entrance of springs and water courses that are to be found at that season. They are practically wild birds, and it is possible and probable that some are really wild.

Many of them have more or less blood of the Black Duck, but my courtship description applies to what appeared to be full blooded Mallards.

When the Mallard drake courts, he swims restlessly about following or sidling up to a duck. She may lead him quite a chase before she vouchsafes to acknowledge his presence, although he is continually bowing to her, bobbing his head up and down in nervous jerks so that the yellow bill dips into the water for a quarter of its length and comes up dripping. He also rears himself up in the water and from time to time displays his breast. She occasionally turns her head to one side and carelessly dabbles her bill in the water, but sooner or later, if all goes well, she begins to bow also, less vigorously at first — not touching the water at all — and to the empty space in front of her. Suddenly she turns and the pair bow to each other in the same energetic nervous jerks, and, unless a rival appears to spoil the situation, the drake has won his suit. A somewhat similar description of the courtship is given by J. G. Millais,¹ but none as far as I know has been given by American writers.

The most numerous duck in the fresh waters in and about Boston is the Black Duck and both *Anas rubripes rubripes* and *Anas rubripes tristis* are well represented throughout the winter and spring. A group of fifteen or twenty may be seen solemnly feeding by dipping, with their tails pointing zenithward, when they begin to swim about nervously, weaving their ways in and out among their fellows. Now one swims rapidly with head low and darts at another that, in order to avoid him, dives just below the surface with a great splashing with his wings. Soon nearly the whole group are chasing each other and diving awkwardly. Every now and then the short quack of the drake is heard, sometimes the loud croak of the duck. Now a drake flies for fifteen or twenty feet over the water with drooping body and legs and plumps down by a duck with a splash and an impetus that carries him three or four feet further. This is repeated again and again by the drakes and is a conspicuous part of the courtship. At times they bob the head in a manner exactly similar to that already described in the case of the

¹ The Natural History of the British Surface-feeding Ducks, 1902, p. 6.

Mallard. The bobbing does not continue so long, for the short flights seem to play a more essential and important part in the courtship of the Black Duck. It is possible that the white lower surface of the wings revealed in these short flights may have an entrancing effect on the females. The under surface of the wings of Pigeons who indulge in the same tactics on land are also white. It is a common courtship action however, even with birds whose under wing surface is not conspicuous and, it seems to me, these flights are very different from the pursuit in the air of the female by one or more males. The short flights are courtship displays for the purpose of attracting the female and of leading to a choice. The pursuit flights are different and are not in the nature of display; it is possible indeed that the choice has already been made. Such flights take place both in the case of the Black Duck and of the Mallard and probably of other species.

A striking instance of pursuit flight in the Black Duck observed in Southern Labrador in 1909, I have described as follows:¹

"At Esquimeaux Point on June 2, as I was standing on the rocks on the shore, I was startled by the loud quack or croak characteristic of the female black duck, and looking up I saw two large black ducks, evidently males, in close pursuit of a smaller female. They doubled and twisted in a manner wonderful to see, as the duck appeared to be straining every nerve to elude the drakes. At last one of the drakes gave up the pursuit and disappeared over the low forest, whereupon the other drake and the duck sailed away together, as if it had all been arranged beforehand, straight to a secluded pool out of sight behind the rocks."

Mr. Bent has seen similar flights in the Mallard in Manitoba and thus describes it:² "I have seen as many as three males in ardent pursuit of one female, flying about high in the air, circling over the marshes in rapid flight and quacking loudly; finally the duck flies up to the drake of her choice, touches him with her bill and the two fly off together, leaving the unlucky suitors to seek other mates."

I have found no previous mention of the courtship of the Black

¹ "A Labrador Spring," 1910, p. 95.

² MS.

Duck except one by Mr. Edmund J. Sawyer¹ who describes the actions of two Black Ducks that flew repeatedly two or three rods back and forth in a small pool, alighting each time with splashes of the water while other ducks swam about unconcernedly. An interesting sketch of this courtship flight illustrates the article.

The Baldpate (*Mareca americana*) is a charming little duck with his pale blue bill, snowy white pate, and vinous breast. He is an arrant thief, however, and much prefers to rob his diving neighbors, particularly the Coot and Lesser Scaup, of their provender brought from the bottom by honest labor, than to search the shallower waters by his own limited method of dipping. The robbery is bold and open, and apparently awakens no resentment. In his courting he continually emits gentle but eager whistling notes, and with neck extended and head low, bill wide open and wings elevated behind so that the tips are pointed up at an angle of forty-five degrees, he swims rapidly over the water behind or beside the duck. Occasionally he pecks playfully at the side of her head, and now and then in his excitement jumps clear of the water and flies for two or three yards.

I have found no previous account of the courtship of this species. Millais' description of the courtship of the European Wigeon (*Mareca penelope*) shows a striking similarity, the only difference being in the character of the note emitted. Millais² says that as the female swims away, the drakes "follow in a close phalanx, every male raising his crest, stretching out his neck close over the water and erecting the beautiful long feathers of the scapulars to show them off. He also depresses the shoulder joint downwards, so as to elevate the primaries in the air. All the time the amorous males keep up a perfect babble of loud Whee — ous, and they are by far the noisiest of ducks in their courtship."

The courtship of the Wood Duck (*Aix sponsa*) is a pretty sight. The gorgeously colored drake swims close to his modest little wife who is dressed in quaker gray and wears large white spectacles. If she swims too fast for him he is apt to touch her head with his bill, and when she stops he jerks his head up and down in an

¹ Bird Lore, XI, 1909, p. 195.

² British Surface-feeding Ducks, p. 45.

abbreviated bow. At the same time he whistles in a low sweet way as if he were drawing in rather than blowing out his breath. The feathers of his crest and head are at the same time erected.

The only description heretofore given of this courtship that I can find, with the exception of a partial one by Hatch,¹ is the following from Audubon:² "Observe that fine drake. How gracefully he raises his head and curves his neck. As he bows before the object of his love, he raises for a moment his silken crest. His throat is swelled and from it there issues a guttural sound, which to his beloved is as sweet as the song of the Wood Thrush to its gentle mate. The female as if not unwilling to manifest the desire to please which she really feels, swims close by his side, now and then caresses him by touching his feathers with her bill, and shows displeasure towards any other of her sex that may come near. Soon the happy pair separate from the rest, repeat every now and then their caresses, and at length having sealed the conjugal compact, fly off to the woods to search for a large Woodpecker's hole."

The Bufflehead (*Charitonetta albeola*) in nuptial plumage is a handsome sight and well deserves his name for his head is as large in proportion to his body as is the Buffalo's, for *buffle-head* means, I suppose, *buffalo-head*. The white triangle behind the eyes contrasts strikingly with the glossy greenish-black forehead, and the white of the flanks rolls up over the white of the wings. The female is much more modestly dressed and only a small white patch adorns her smaller head.

As far as I know the courtship of this species has never been described. Millais³ says "From what I could gather from naturalists in British Columbia the Courtship is very like, if not exactly similar to that of the Golden-eye, but no one seems to have observed it at close range." As will be seen my own observations do not bear this out.

A group of thirty-five or forty of these birds with sexes about equally divided may have been actively feeding, swimming together in a compact flock all pointing the same way. They dive within a few seconds of each other and stay under water 14 to 20

¹ P. L. Hatch, "Notes on the Birds of Minnesota," 1892, p. 54.

² Birds of America, 1842, VI, p. 275.

³ British Diving Ducks, Vol. I, p. 109.

seconds and repeat the diving at frequent intervals.¹ Suddenly a male swims vigorously at another with flapping wings, making the water boil, and soon each male is ardently courting. He spreads and cocks his tail, puffs out the feathers of his head and cheeks, extends his bill straight out in front close to the water and every now and then throws it back with a bob in a sort of reversed bow. All the time he swims rapidly, and, whereas in feeding the group were all swimming the same way in an orderly manner, the drakes are now nervously swimming back and forth and in and out through the crowd. Every now and then there is a commotion in the water as one or more drakes dive with a splashing of water only to come up again in pursuit or retreat. As the excitement grows a drake flaps his wings frequently and then jumps from the water and flies low with outstretched neck towards a duck who has listlessly strayed from the group. He alights beside her precipitately, sliding along on his tail, his breast and head elevated to their utmost extent and held erect. He bobs nervously. And so it goes.

RHYTHMICAL SINGING OF VEERIES.

BY HENRY OLDYS.

IN a recent article in 'The Independent' I made the following statement:

"Thrush songs are especially worthy of careful investigation, because of their advanced character. Those of superior Olive-backed, Hermit, and Wood Thrushes, disclose a rhythmical arrangement very satisfying to the human ear; and from incomplete study of the singing of the Veery, I am inclined to believe that the oboe phrases of this member of the thrush family will, in some instances, be found, on close attention, to show a similar arrangement."

Since this article was published (20th July, 1914) I have been so

¹ A series of four dives timed with a stop watch in the Back Bay Basin averaged 18 seconds, varying between 14 and 20 seconds. At Lynn Beach of four dives three were 17 seconds, one, 15 seconds, in duration.